

DEPARTMENT of ENVIRONMENTAL SERVICES  
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: PINE ISLAND POND	Lake Area (ha): 17.16
Town: MANCHESTER	Maximum depth (m): 3.0
County: Hillsborough	Mean depth (m): 1.5
River Basin: Merrimack	Volume (m <sup>3</sup> ): 265000
Latitude: 42°55'53" N	Relative depth: 0.7
Longitude: 71°27'07" W	Shore configuration: 2.31
Elevation (ft): 151	Areal water load (m/yr): 503.0
Shore length (m): 3385	Flushing rate (yr <sup>-1</sup> ): 326.0
Watershed area (ha): 17889.2	
% watershed ponded: 7.7	Lake type: artificial

BIOLOGICAL:

		2 February 1998	24 July 1997
DOM. PHYTOPLANKTON (% TOTAL)	#1	SPARSE - NO DOMINANT	DINOBRYON 85%
	#2		MELOSIRA 10%
	#3		CERATIUM 5%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			14.82
DOM. ZOOPLANKTON (% TOTAL)	#1	NONE OBSERVED	DAPHNIA 26%
	#2		NAUPLIUS LARVA 20%
	#3		CYCLOPOID COPEPOD 20%
ROTIFERS/LITER			35
MICROCRUSTACEA/LITER			147
ZOOPLANKTON ABUNDANCE (#/L)			206
VASCULAR PLANT ABUNDANCE			Common/Abun
SECCHI DISK TRANSPARENCY (m)			1.4
BOTTOM DISSOLVED OXYGEN (mg/L)		13.3	7.8
BACTERIA (E. coli, #/100 ml)	#1		7
	#2		6
	#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None  
Hypolimnion volume (m<sup>3</sup>): None  
Anoxic volume (m<sup>3</sup>): None

**CHEMICAL:**

Lake: PINE ISLAND POND

Town: MANCHESTER

	2 February 1998		24 July 1997		
DEPTH (m)	2.0		1.0		2.0
pH (units)	6.2		7.2		7.4
A.N.C. (Alkalinity)	7.3		20.6		20.4
NITRATE NITROGEN	0.37		0.14		0.15
TOTAL KJELDAHL NITROGEN	0.80		0.60		0.40
TOTAL PHOSPHORUS	0.011		0.018		0.021
CONDUCTIVITY ( $\mu$ mhos/cm)	330.4		290.4		291.1
APPARENT COLOR (cpu)	42		50		50
MAGNESIUM			2.19		
CALCIUM			11.9		
SODIUM			41.5		
POTASSIUM			1.96		
CHLORIDE	92		70		70
SULFATE	12		7		7
TN : TP	106		41		26
CALCITE SATURATION INDEX			1.7		

All results in mg/L unless indicated otherwise

**TROPHIC CLASSIFICATION: 1997**

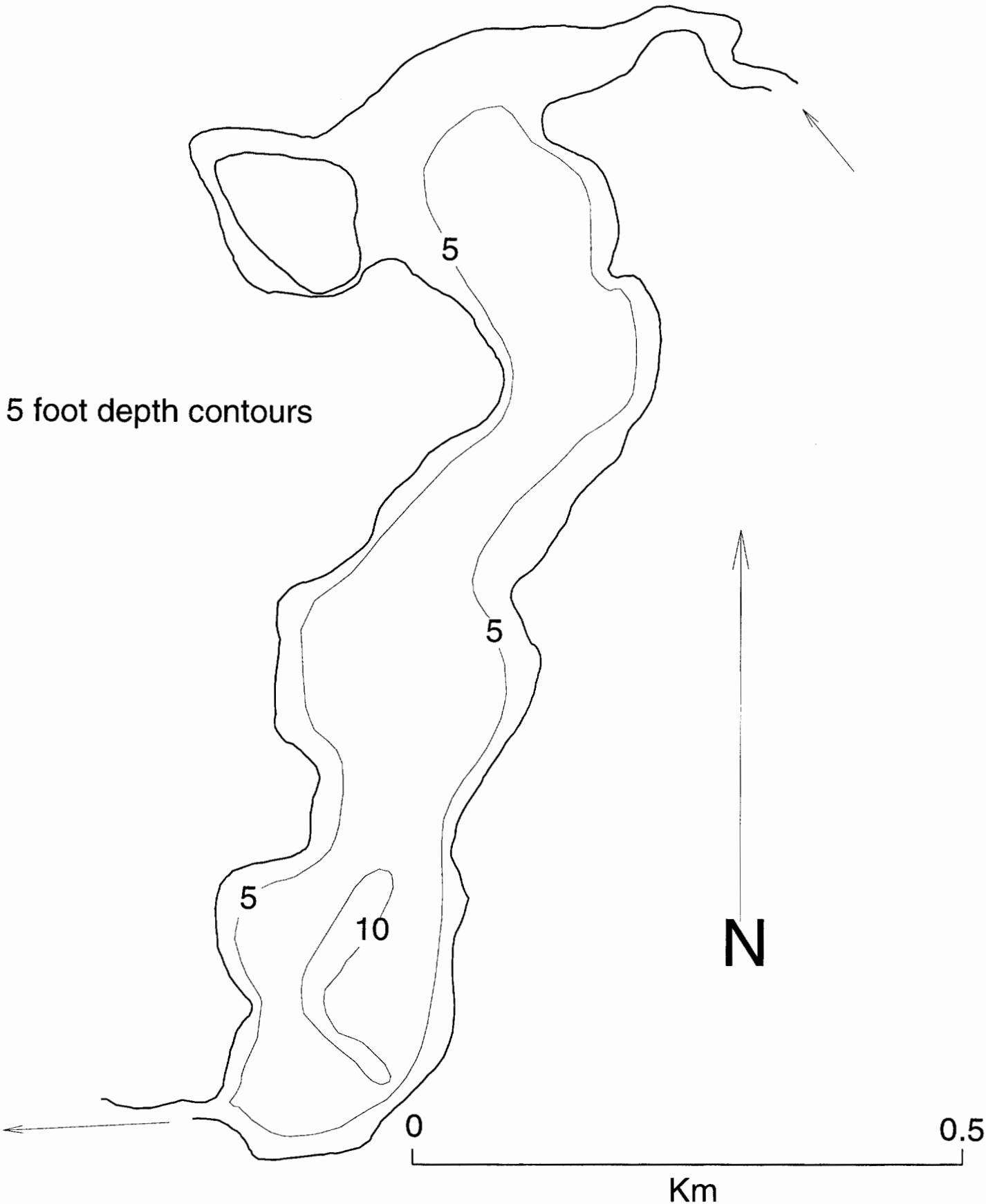
D.O. S.D. PLANT CHL TOTAL CLASS

**	4	4	3	11	Eutro.
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**COMMENTS:**

1. This pond was previously surveyed in 1980 and was also classified eutrophic at that time.
2. AKA Goffs Falls
3. This is an impoundment on Cohas Brook, which is the outlet stream from Lake Massabesic, the public water supply source for the City of Manchester. The watershed area, and related calculations such as flushing rate, include the Massabesic watershed. However, much of the Massabesic water enters Manchester's public water supply distribution system and does not exit the lake through the outlet. The actual flushing rate of Pine Island Pond is much less than the reported value.
4. Many ducks were observed; bryozoans (*Pectinatella magnifica*) were present on the back side of the island

# Pine Island Pond Manchester



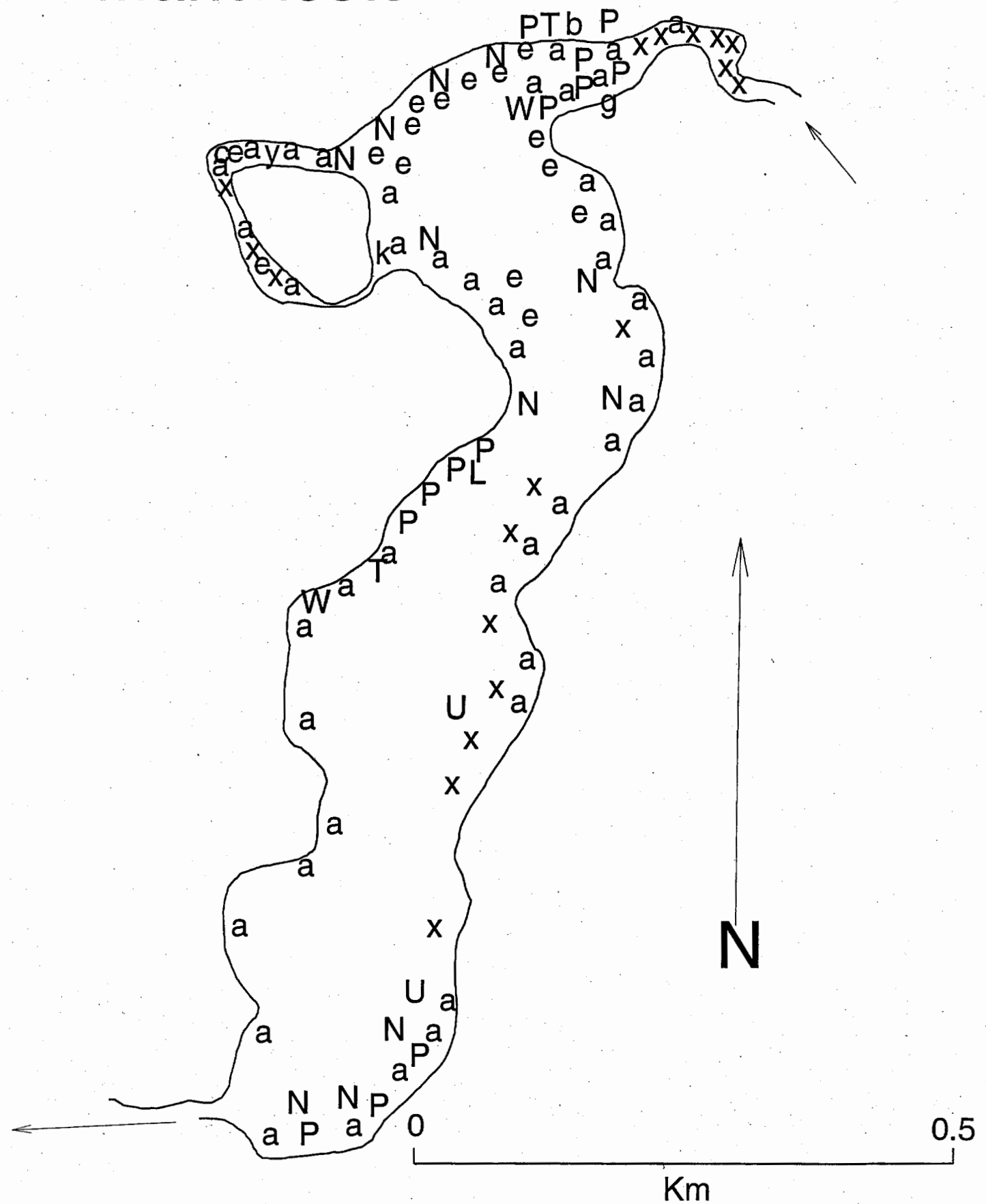
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WEATHER: HAZY SUN

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**COMMENTS :**

\*Dissolved oxygen values are in mg/L



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